

Amendments to the Specification:

Please cancel paragraph [009], and insert the following replacement paragraph therefor:

[009] In the present invention, Applicants have discovered that although the electrical resistivity of pBN in the perpendicular direction (parallel to the "c" direction) is higher than the direction parallel to the plane for neutron detectors employing pBN, the value can be reduced by doping the pBN with one of C, Si, or Ge and optionally with other dopants including oxygen. Thus, in these neutron detectors, electrodes can still be applied in the direction normal to the "c" direction (parallel to the $[[a-b]] \perp$ plane), facilitating the construction of neutron detectors. As shown in Figure 1a, doped pBN of the present invention allows electrical contacts to be applied to the two opposing surfaces 11 of the structure 10. The neutron detector of the present invention retains all the advantages of a compact solid state detector that responds strictly to neutrons and is not affected by gamma rays.